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PROCEEDINGS

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UTM UNIVERSITI TEKNOLOGI MALAYSIA RESEARCH UNIVERSITY

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"Developing Innovative Technology towards Better Human Life"

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Prof. Dr. Hadi Nur—UTM, Malaysia
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20th – 21st NOVEMBER 2013
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UNIVERSITI TEKNOLOGI MALAYSIA

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PREFACE

Bismillahirrahmanirrahim.

In the name of God, the Most Gracious, the Most Merciful

Assalamualaikum warahmatullahi wabarakatuh.

Persatuan Pelajar Indonesia (PPI-UTM), Universiti Teknologi Malaysia has successfully organized the Technology, Education, and Science International Conference (TESIC 2013) on 20th – 21st November 2013 in Universiti Teknologi Malaysia. The theme of this International Conference is "Developing innovative technology towards a Better Human Life". Technology, Education, and Science International Conference (TESIC 2013) includes a diverse area of research, such as Pure and Applied Science, Technology and Engineering, Clinical and Health Sciences, Social Sciences, Arts and Applied Arts, and Information and Communication Technology.

This International Conference is expected to present prospect for all academicians, scientists, and researchers to encourage, impart and share ideas in promoting research network among interdisciplinary field of studies. There are 142 papers presented by academicians, scientists, and researchers from Asia.

Finally, we would like to extend our gratitude to all those who are involved in the publication of the proceeding of TESIC 2013. It is hoped that this proceeding will contribute to the development of Technology, Education, and Science particularly in Asia and among the international academicians, scientists, and researchers in general.

EDITORS:

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Bismillahirrahmanirrahim.

In the name of God, the Most Gracious, the Most Merciful

Assalamualaikum warahmatullahi wabarakatuh.

I would like to express praises and gratitude to Almighty Allah because it is only by His permission that I am able to convey my forewords in the proceeding of Technology, Education, and Science International Conference (TESIC) 2013 organized by Persatuan Pelajar Indonesia (PPI–UTM), Universiti Teknologi Malaysia. I would like to take this opportunity to congratulate and compliment the committee members of this International Conference who have consistently work very hard to produce this proceeding.

The publication of this proceeding is expected to benefit as many parties as possible and become a reference for those who wish to gain further knowledge on Technology, Education, and Science.

Finally, I hope that through such initiatives of Technology, Education, and Science event and publication of conference's proceeding, a higher quality of research and publication can be multiplied in the future.

Best regards,

Prof. Dr. Hadi Nur
Ibnu Sina Institute for Fundamental Science Studies
Universiti Teknologi Malaysia

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Measurement of Teaching Quality of Teachers and Its Relation with the Result of National Examination

Kaharuddin Arafah [a *], Yusniati H. Muh. Yusuf [b]

[a] *Physics Lecturer in State University of Makassar, Jl. Dg Tata Kampus FMIPA UNM Parangtambung Makassar 90224, Indonesia.*
[b] *Physiscs Lecturer at Physics Education Study Program, Nusa Cendana University, Jl.Adisucipto Penfui Kotak POS 104 Kupang 85001, Indonesia.*
*Corresponding Kaharuddin Arafah. Tel.: +62-8124-422-6077
E-mail address: eltigakahar@yahoo.com

Abstract

The present research was aimed to know the description of the teaching quality of physics teacher in Kupang, Nusa Tenggara Timur (NTT), Indonesia. In addition, it was aimed to know the relationship between the teaching quality of teacher and the result of national examination (UN) of senior high school students (SMA/MA) in Kupang, NTT, in physics subject. To obtain the goals, a study was done with 314 subjects in some senior high schools in Kupang using *Proportionate Random Sampling* technique. The results of the research suggest that the teaching quality of physics teacher is at middle category. Moreover, the results indicate that there is a significantly positive relationship between the teaching quality of teachers and the result of UN, in physics subject, of senior high school students, in Kupang, NTT.

Keywords: Teacher quality, National examination, positive and significant correlation

1. Introduction

Recently, the quality of Indonesia's education is quite worrying. It is shown by the data of *United Nations Development Programme* (UNDP) issued in 2 November 2011 concerning the rank of Human Development Index (HDI), namely, the composition of the achievement per capita in the field of education, health, and income showing that the development index of Indonesia decreases. Of 174 coutries, Indonesia is at the 102th rank in 1996, the 99th in 1997, the 105th in 1998, 109th in 1999, and 124th in 2011. Especially in the field of education, Indonesia is at the 119th rank out of 187 countries. Specifically, in Pacific Asia, the HDI of Indonesia is at the 12th rank of 21 countries (Yusuf, 2013).

Further, Yusuf (2013) suggests that the descriptions are supported by the data of *Education For All* (EFA) Global Monitoring Report 2011: *The Hidden Crisis, Armed Conflict and Education* issued by UNESCO in 2011 stating that the *education development index* (EDI) of Indonesia in 2008 is 0,934 which put it in the 69th rank of 127 countries. In addition, it is supported also by the data of the national examination (UN) passing percentage of students both in elementary level and high level which is below 98%.

The passing of students in UN which is one of the indicators of education quality is highly notified by Indonesia government to increase the education quality. UN, still questioned by many people, should give positive influence to Indonesian human competitiveness. Moreover, UN, as a goverment program, should be regarded as a long term program. It means that UN is aimed at improving the quality of Indonesia's education to not be left away from other countries. The process should run when students begin their education until their graduation.

In "Ayo Bangkit Indonesiaku " program, it is said that the existence of UN lead a student to be ready in becoming a ready competing human who can receive both success and failure. The success and the failure are in the form of passing and not passing UN respectively. Therefore, in the beginning of learning, students should be directed to see that UN is a usual exam and should be taken by students.

Based on the report of *Puspendik* (the centre of education research) related to the result of UN in academic year 2011/2012, it states that one of the provinces in Indonesia which is in the low rank provinces is Nusa Tenggara Timur (NTT), including science subject. In addition, in UN 2008/2009 followed by 7.756 students, 21,03% of them didn't pass, with 6,06, in average, as the mark of the physics subject. Further, in UN 2009/2010, 2,90% of 8.348 students didn't pass. Specifically in Kupang, there were 6,83% of 1.318 students who didn't pass in the UN 2008/2009, with 7,93, in average, as the mark of the physics subject. Meanwhile, the average of the mark in the physics subject in UN 2009/2010 was 6,94 causing 0,36% of 1.405 students didn't pass. Furthermore, the percentage of the students who didn't pass and the mark average

of physics subject are respectively 9,74% out of 1.191 students and 8,25. Although the passing percentage from year to year in Kupang tends to increase, it is still lower compared to other provinces, such as, Bali and Nusa Tenggara Barat (NTB).

The low result of UN attracts the authors in finding the solution to overcome the problem. The mark average of UN in certain subjects is influenced of many factors. Syah (2008) suggested that the external factor can be divided by two sub-factors, i.e. social environmental factor and non-social environmental factor. The social environmental factor consists of (1) the social environment of society, that is, the society social environment of the students, 2) socal environment of family such as parents as well as the support and the situation in students' house, 3) the social environment of school, such as teacher, administration, and friends. Meanwhile, the non-social environmental factors consist of 1) natural environment, such as fresh air as well as calm situation of classroom, 2) instrumental factor, namely, learning packages such as, classroom, learning tools, text book, and so on. There is also internal factor which is a factor within student itself comprehending of fisiology or physical aspect and physchological or mental aspect.

An external factor that is very influential to the improvement of the quality and the learning achievement of students is teacher competency. According to law no. 41, year 2005 about teacher and lecturer in chapter 10, article 1, teacher competency includes pedagogical competency, personality competency, social competency, and professional competency derived from profession education. Pedagogical competency is a competency of managing the learning of students. Meanwhile, personality competency is in the form of good personality, attitude, and behavior in which a teacher can be a good guide for his students. Professional competency is a skill of mastering a subject comprehensively. In further, social competency is an ability of teacher in effectively and efficiently communicating with students, parents, teachers, and environment.

Of the four competencies of a teacher, there are three competencies related to the learning achievement of students, in specific, in the result of physics subject of UN, namely pedagogical competency, personality competency, and professional competency. Related to the teaching quality of teachers, an empirical study shows that a teacher who has a certification in certain subject can lead his students to have better achievement rather than a teacher who doesn't has. Hawk,et.al conducting a study of junior high school teachers and 826 students found that students taught by a certified teacher in mathematics got better result in mathematics rather than those who were taught not by a certified teacher in matematics. The other indicator of teachers which has been studied is teacher's experience. Greenwald and Laine (1996) and Rice (2003) reported that an experience teacher teach more effectively than an unexperienced teacher in (Akiba, Gerald K., and Jay, 2007).

Teaching is a process of arranging and organizing the environment of students so it can encourage students to study (Sudjana, 2004). Teaching is defined as a complex and integrative system of several skills to reveal message to another person. Therefore, in teaching process, a teacher doesn't only give information to students orally, however, but he also creates learning environment leading students to actively involve in learning.

Related to teaching process, Cooper, in Alma (2008) classified the basic skills of teaching as follows: (a) *instructional planning skills*, (b) *lesson presentation skill,* (c) *questioning skills*, (d) *teaching concepts skills*, (e) *interpersonal communication skills*, (f) *classroom management skills*, (g) *observation skills*, and (h) *evaluation skills*. Meanwhile, Turney, as quoted by [6] classified the basic skills as follows: (a) *questioning skills*, (b) *classroom management and discipline skills*, (c) *varying the stimulus skills*, (d) *reinforcement skills*, (e) *explaining skills*, (f) *set induction skills*, (g) *small group teaching skills*, (i) *developing thinking skills*, and (j) *individualing teaching skills*.

Based on those theories, it can be explained that teaching needs some skills that can be developed. Teacher needs several skills, mainly in preparing a learning, being active in learning process, and even as an evaluator for the learning achievement of his students. Consequently, the existence of teacher in cooperating with his students in obtaining the goals of learning is quite necessary.

In further, Hudoyo (1991) explained that teaching is an activity involving teacher and student. A student is expected to study because of the intervention of a teacher. The intervention refers to the rule of a teacher to his students and other educational resources which consequently lead the students to study. With the intervention, students are accustomed to study.

Based on those descriptions, it can be considered that the teaching quality of teacher is the level of teacher's ability in opening and closing a learning, explaining physics lesson, using technology and media of physics learning, organizing class, asking, interacting through interpersonal communication with students, and doing evaluation.

1.1. Research Question

The question of the research is: *is there any significantly positive relationship between the teaching quality of physics teacher and the result of UN, in physics subject, of senior high school students in Kupang, NTT*?

1.2. Research Objective

The objective of the research is to know the relationship between the teaching quality of physics teacher and the result of UN, in physics subject, of senior high school students in Kupang, NTT.

1.3. Research Hypothesis

There is a significantly positive relationship between the teaching quality of physics teacher and the result of UN, in physics subject, of senior high school students in Kupang, NTT.

2. Research Methodology

The present research is an *Ex-post facto* research with the teaching quality of teacher (X) as independent variable ad the result of UN in physics subject as dependent variable (Y). The research was conducted in senior high school (SMA/MA) in Kupang, in academic year 2012/2013. The number of senior high schools, as the population, is 24 schools with 1.934 studets. The sampling method used was *Proportionate Random Sampling* by using table of the number of sample determination of *Isaac and Michael* (Sugiyono, 2009). Based on the table, the number of the sample was 314 students with significant level of 5%.

The data of teaching quality were obtained using questionnaire developed by the authors. Meanwhile, the data of the UN result were obtained from the documentational data of bureau of education and culture of Kupang, year 2013 derived form the Centre of Education Evaluation as well as The Research and Development Bureau in the Ministry of Education and Culture.

The questionnaire of the teaching quality was validated using expert validation and was counted using *Hoyt* analysis (Muhammad and Djaali,2003), with the coefficient of interexpert consistency which is 0,857. Besides that, a pilot test was conducted in 60 respondents and the item validity was counted using techique of *Product Moment* (Sugiyono, 2009). After the calculation was applied with the level of significance of 5%, 44 items out of 49 items were considered as valid items. Finally, the reliability of the instrument using Alpha coefficient equation (Djaali and Mulyono, 2004) was seeked with 0,854 as the obtained coefficient

Moreover, the paradigm of the relationship among variables is described in figure 1.

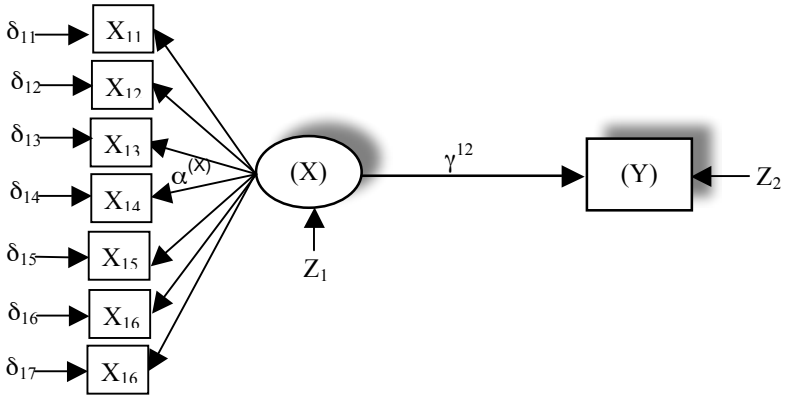

Figure 1. The paradigm of the relationship among variables

nb:
X = the teaching quality of teacher
Y = the result of UN in physics subject

The tested hypothesis is formulated as follows:

$Ho : \rho_{xy} = 0, \quad H_1 : \rho_{xy} \neq 0$

3. The Result of the Research and Discussion

3.1. The Data Description of the Research Result

In this part, the data obtained from the questionnaire of the teaching quality of physics teacher (X), and the result of UN, in physics subject (Y) are presented. The summary of the descriptive statistics of the two variables is presented in table 1

Table 1. The descriptive statistics of each variable

Statistic	Teaching Quality of Physics Teacher (X)	The result of UN in physics subject (Y)
Mean	148.124	28.847
Median	147	30
Modus	146	33
Standard deviation	13.709	5.775
Variance	187.949	33.357
Skewness	0.457	-0.371
Curtosis	0.964	-0.873
Range	86	24
Minimum	111	15
Maximum	197	39

Source : The raw data are analyzed using SPSS 20.0

The highest score for each question is 5 and the lowest score is 1. Consequently, the theoretical score ranges from 44 to 220. Based on the obtained data, the score of the teaching quality of physics teacher ranged from 111 to 197. The range of the variable scores of the teaching quality of physics teacher was 86 indicating that the teaching quality of physics teacher are various in level. Meanwhile, the range of the UN score in physics subject was 15 to 39. The difference of 39 indicates that the scores are also various in level.

Next, the data were presented in frequency distribution table with five categories. The spread of the data distribution of the teaching quality of teachers and the result of UN is presented in table 2.

Table 2. The Frequency Distribution, The Percentage, and The Category of each Variable

Teaching Quality of Teachers				The Result of National Examination			
Interval	**Category**	**Frequency**	**Percentage**	**Interval**	**Category**	**Frequency**	**Percentage**
188 – 223	Very High	4	1.91	8.1 – 10.0	Very High	36	11,46
152 – 187	High	116	36,94	6.1 – 8.0	High	169	53,82
116 – 151	Middle	191	60,83	4.1 – 6.0	Middle	97	30,89
80 – 115	Low	3	0.96	2.1 – 4.0	Low	12	3,82
44 – 79	Very Low	0	0.00	0.0 – 2.0	Very Low	0	0
Total		**314**	**100**		**Total**	**314**	**100**

Based on table 2, the teachers who are in the middle category outnumber teachers in the other categories. In addition, the result of UN which is in the middle category is in the highest frequency of all categories.

3.2. Factor Analysis

Based on the criteria of *Goodness of Fit* (Wijaya, 2009), the model, in the preliminary step, had an index which didn't quite support the model itself. Consequently, a step was conducted to increase the index *overall fit* using the approach of *building-trimming* toward a parameter through *Modification Indices* consideration provided by AMOS 20.0. After the refinement was applied, the *overall fit* index was seen whether it is good. It can be said a good index when the value of *Chi square* = 17.963; df = 10; so that CMIN/df = 1.796 < 2 ; p = 0.056 > 0.05. meanwhile, the other values, such as GFI, AGFI and RMSEA, were already fit with the criteria. The value of RMR was 0.508 , although lower than 0.08 as a good model criterion, however, it can be balanced by the value of GFI and AGFI. Since all criteria finally showed *acceptable fit,* as the consideration for the fitness of a model, the model is acceptable.

The loading value of regression could explain the covariance between latent variable and its indicators, in which the *critical ratio* having a value two times higher than *standard error* indicates that all items are valid for each variable. In this case, AMOS used a criteria of 0.001 and not 0.05. Based on the output presented in table 3, the value of P is ***, meaning that the value of P 0.000 far below 0,05. In conclusion, all indicators can explain the latent variable.

Table 3. Regression Loading of the Teaching Quality of Physics Teacher

			Estimate	S.E.	C.R.	P	Label
X_{11}	<---	Teaching Quality	1.000				
X_{12}	<---	Teaching Quality	.513	.069	7.455	***	par_1
X_{13}	<---	Teaching Quality	.854	.112	7.614	***	par_2
X_{14}	<---	Teaching Quality	.686	.099	6.912	***	par_3
X_{15}	<---	Teaching Quality	.381	.089	4.286	***	par_4
X_{16}	<---	Teaching Quality	.416	.078	5.323	***	par_5
X_{17}	<---	Teaching Quality	.527	.089	5.932	***	par_6

Besides that, the regression loading is explained by presenting it *Standardized Regression Weights* output. The number in *estimate* column shows the *factor loading* of each indicator toward latent variable. Because in the construction of the teaching quality of teacher, there are seven indicators causing that there are seven *factor loading*. Several literatures suggest that the restriction is 0.4 (Kusnendi, 2008).

Based on the data in table 3, it can be explained that there are 6 indicators that have strong relationship with the latent variable i.e. X_{11}, X_{12}, X_{13}, X_{14}, X_{16} and X_{17}, because they have loading factor more than 0,4. The indicators are the ability of teacher in opening and closing a learning (X_{11}); the ability of teacher in explaining physics lesson (X_{12}); the ability of teacher in utilizing physics learning media and technology (X_{13}); the ability of teacher in organizning class (X_{14}); the ability of teachers in interacting through interpersonal communication (X_{16}); and the ability of teacher in doing evaluation (X_{17}). Meanwhile, the indicator of teacher in asking students (X_{15}) has weak relationship since it has *estimate* lower than 0,4. Consequently, the indicator X_{15} were not involved in seeking for the relationship between it and the result of UN. In other words, the item score of the indicator X_{15} was not involved in the regression calculation to find the relationship to the variable of the result of UN.

3.3. Model Verification

In the preliminary analysis, the value of chi-square, df, CMIN/df and the value of p didn't support the fitness of the model. The index of*overall fit* for the preliminary step showed the value of Chi square = 118.469; df = 52; so the value of CMIN/df = 2.278; p = 0.000. In further, the index of *overall fit* should be increased using the approach of *building-trimming* model through *Modification Indices* consideration provided by AMOS 20.0.

The result of the end-part of the analysis shows the index of *overall fit* is considerably good with the value of Chi square = 59.323; df = 46; and CMIN/df = 1.290 ≤ 2 ; p = 0.090 ≥ 0.05. In addition, the other values of GFI, AGFI and RMSEA, are appropriate to the criteria since all criteria show *acceptable fit,* as the standard of model fitness. The result of model analysis of structural equation, in the end-part analysis is presented in figure 2.

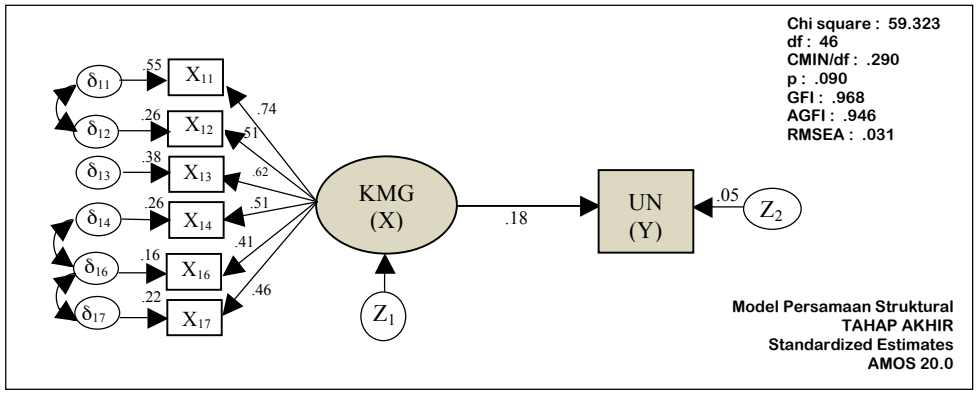

Figure 2. Structural Equation Model

The structural equation appropriate to the final model based on the value of *regression weights* and *squared multiple correlation* is Y = 28,726 + 0,389 X

3.4. Hypothesis Test

The result of the hypothesis test suggests that the relationship between the teaching quality of physics teacher and the result of UN, in physics subject shows estimation value of $\rho_{x_1 y}$ = 0.389 which is positive with the value of p = 0.022 < 0.05 which is significant. It means that the teaching quality of teacher has significantly positive relationship with the UN result, in physics subject in which, specifically, the hypothesis is tested in significance level of 0,05.

4. Conclusion

Based on the data analysis, it can be conluded that:

a. The variable of teaching quality of teachers is constructed by six indicators, i.e. the ability of teacher in opening and closing a learning ; the ability of teacher in explaining physics lesson ; the ability of teacher in utilizing physics learning media and technology ; the ability of teacher in organizning class ; the ability of teachers in interacting through interpersonal communication ; and the ability of teacher in doing evaluation.
b. The teaching quality of teacher has significantly positive relationship with the UN result, in physics subject.

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References

Akiba, Motoko., Gerald K. Le Tendre, and Jay P. Scribner . 2007. Teacher Quality, Opportunity Gap, and National Achievement in 46 Countries. *Educational Researcher.* 36(7): 369–387.

Alma, Buhari. 2008. *Guru Profesional; Menguasai Metode and Trampil Mengajar*. Bandung : Alfabeta.

Anom. 2006. *Undang-Undang Nomor 20 Tahun 2003 tentang Sistem Pendidikan Nasional*. Jakarta: Badan Standar Nasional Pendidikan.

Anon. 2005. *Undang-Undang Nomor 14 tahun 2005 tentang Guru and Dosen*. Jakarta: Departemen Pendidikan Nasional.

Anon. 2006. *Peraturan Pemerintah Nomor 19 Tahun 2005 Tentang Standar Nasional Pendidikan*. Jakarta : Badan Standar Nasional Pendidikan.

Arafah, Kaharuddin. 2011. Pengaruh Sarana Prasarana Akademik, Kualitas Mengajar Dosen, Atmosfir Akademik, and Motivasi belajar terhadap Prestasi Belajar terhadap Prestasi Belajar Fisika Program Kelas Internasional FMIPA UNM Makassar. *Disertasi*. Tidak diterbitkan. Jakarta: Program Pascasarjana UNJ.

Ayo Bangkit Indonesiaku. 2008. retrieved from http://ayobangkitindonesiaku.wordpress.com/2008/02/10/ujian-nasional-and-persaingan-global/

Djaali and Mulyono, Pudji. 2004. *Pengukuran Dalam Bidang Pendidikan*. Jakarta: Program Pascasarjana Universitas Negeri Jakarta.

Hudoyo, Herman. 1991. *Belajar Mengajar Matematika*. Jakarta: Direktorat Jenderal Pendidikan Tinggi Departemen Pendidikan Nasional

Kusnendi. 2008. *Model-model Persamaan Struktural (Satu and Multigroup Sampel dengan LISREL).* Bandung: Alfabeta

Muhammad, Farouk and Djaali. 2003. *Metodologi Penelitian Sosial*. Jakarta: PTIK Press and CV Restu Agung.

Puspendik (2010-a). Laporan hasil Ujian Utama Ujian Nasional SMA/MA, SMK and SMP tahun Pelajaran 2008/2009

Puspendik (2010-b). Laporan hasil Ujian Utama Ujian Nasional SMA/MA, SMK and SMP tahun Pelajaran 2009/2010.

Puspendik (2010-c). Laporan hasil Ujian Utama Ujian Nasional SMA/MA, SMK and SMP tahun Pelajaran 2010/2011

Puspendik (2010-e). Laporan hasil Ujian Utama Ujian Nasional SMA/MA, SMK and SMP tahun Pelajaran 2012/2013

Slameto. 2003. *Belajar and Faktor-Faktor yang Mempengaruhinya*. Jakarta: Rineka

Sudjana, Nana. 2004. *Penilaian Hasil Proses Belajar Mengajar.* Bandung: Remaja Rosdakarya.

Sugiyono. 2009. *Statistika untuk Penelitian*. Jakarta: Alfabeta.

Syah, Muhibbin. 2008. *Psikologi Pendidikan dengan Pendekatan Baru*. Bandung: Remaja Rosdakarya.

Wijaya, Tony. 2009. *Analisis Structural Equation Modelling menggunakan AMOS.* Penerbit Univ. Atma Jaya: Jakarta

Yusuf, Yusniati H. Muh. 2013. *Hubungan Kualitas Mengajar Guru Fisika and Motivasi Belajar Fisika Peserta Didik dengan Hasil Ujian Nasional Mata Pelajaran Fisika (Studi Kasus Pada Peserta Didik SMA se Kota Kupang)*, Tesis : Makassar Pascasarjana UNM.